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SKANDINAVISKA BANKEN

AKTIEBOLAG

GOTHENBURG STOCKHOLM MALMÖ

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SHORTAGE OF CAPITAL

BY PROFESSOR GUSTAV CASSEL

Since the time immediately preceding the outbreak of the war the danger of inflation has on several occasions been discussed in this periodical from different points of view. This danger still exists and indeed calls for intensified attention. The ultimate cause of inflation is that the financial authorities, refusing to recognize the necessity for accommodating themselves to the existing shortage of capital, resort to tentative measures which seem to admit of a monetary policy pursued without regard to that shortage. Attempts are then made to keep the rates of interest down at a lower level than that which would be required in order to attain an equilibrium between the supply of savings and the demand for capital. The general public are thus deluded into the belief that the capital market is "easy" and are left free to make demands on capital which cannot be supplied from real savings, but can be met only by an unwarranted creation of means of payment.

The capital market is dislocated in a similar way when the State incurs expenditure in excess of that which can be covered by revenue from taxation and by borrowing. Whatever ways and means the State may select for the financing of such excess expenditure, it must in the last resort always be covered by extending the supply of means of payment, or in other words, by inflation.

In such circumstances the financial authorities are apt to indulge in hopes of an increased accumulation of capital, whence the eagerness with which they urge the general public to save. Even in such cases, however, they are fighting shy of disagreeable realities. They try to the last to persuade themselves that this additional saving can be effected without restrictions on consumption which will tend to disturb industry and commerce, thus increasing unemployment. But, when any question arises of restricting a certain kind of consumption, representatives of the corresponding branch of production immediately raise an outcry, protesting that restrictions should be made in other branches, but certainly not in that particular one. This indicates that ideas about saving are apt to be mere bloodless abstractions, and that people shrink from penetrating into the concrete realities which the term connotes.

The shortage of capital, however, is an inescapable fact, to which we are compelled to accommodate ourselves, however unpleasant it may be. When this has once become clear, everybody will realize the necessity of a drastic limitation of the demands for capital. In the present situation the greatest demands on the capital market are being made, as we know, by national defence. The defence of the realm cannot, of course, be neglected. The country must do all in its power to preserve its independence. But people must not suppose that national defence is, so to speak, a chapter by itself, outside the pale of ordinary economic laws. On the contrary, in the organization of national defence it is necessary to exercise the strictest economy. The military authorities should clearly realize that such aims have a fundamental bearing on the capacity of the nation for maintaining an effective defence.

If, however, the State is in any case obliged to make very great demands on the country's capital market, a shortage of capital for industry and commerce is unavoidable. It is no use complaining about it, and it is still more futile to exhort the representatives of industry to continue to carry on their enterprises on the same scale as before or to urge them to blaze new tracks when a certain line of production has been crippled. The situation should be viewed from quite a different angle. We should in fact ask ourselves: is there any possibility at all of providing capital to keep trade and industry going?

If the shortage of capital is acute, it will evidently be necessary to turn industrial production into channels where as little capital as possible will be required. In this way a given supply of capital can be made to suffice for maintaining production to the widest possible extent. It is not possible for the State, any more than for private enterprise, to get away from this necessity. If the State must intervene in order to provide scope for new enterprise, it should take particular care to confine its measures to enterprises which make the least possible demands on capital.

Much haziness, however, prevails in regard to the capital requirements of different industries, and the advice usually given in regard to discrimination between branches of industry in this respect merely reveals ignorance regarding the part played by capital in the national economy. It will therefore be necessary to carry the discussion back to this point. This will indeed oblige us to revert to the elements of economic theory. But the situation is such that a fresh discussion of these rudiments may be necessary and of practical importance.

Capital serves a two-fold purpose. It is required in the actual process of production, because that process involves an element of time. This need of capital, however, is of comparatively short duration, ceasing when the production is completed and finds buyers. But capital is also required in view of the element of time likewise involved in the utilization of durable assets, such as buildings, industrial plants and machinery. The need of capital does not cease with the completion of a dwelling-house. The tenants will pay rent only: somebody must pay for the house itself. For this purpose a considerable amount of capital will be required, and it must be invested for as long a time as that for which the house itself can be used. The same applies to machinery and plants utilized during the process of production. They must be procured with a capital which is available throughout their life.

It is this need of money for the utilization of fixed assets that absorbs the greater part of the capital in the country. These particular requirements of capital must not be overlooked in judging how much capital will be needed for different enterprises. Buildings of various kinds which are usually recommended in the first place as relief-works, in fact make particularly heavy demands on capital. The least demands on capital are made by enterprises working directly in the service of consumption, that is, those which sell their products direct to the consumer and thus have their expenses rapidly covered. The principal examples of such products are foodstuffs, textile goods and fuel. Direct personal services as a rule likewise require but little capital.

Generally speaking, the State finds little scope for the organization of enterprises with small requirements of capital. When the State organizes relief-works, it usually confines itself almost exclusively to road construction, buildings or other works requiring long investments of capital corresponding to their entire value. This should be borne in mind, so that undue reliance is not placed on public works as a means of relieving unemployment. It is a dangerous illusion to believe that the State can diminish unemployment by inducing the public to restrict their consumption and to place the savings thus effected at the disposal of the Government for defraying the expenditure on relief-works of the usual type. As regards the production of consumption goods the State cannot vie with private enterprise. Hence, if the demands for capital are to be kept down, everything possible should be done to encourage private enterprise in this sphere. The Government should at any rate refrain from placing direct obstacles in its way.

In times of depression with steadily falling prices trade and industry may be so crippled that capital assets cannot be utilized to the full. Companies and firms will then be induced to repay their bank loans, thus diminishing the supply of means of payment, with the consequences that the price level sinks still lower and that the slump is aggravated. In such circumstances it may be desirable that the central bank, by the creation of new means of payment, should facilitate an expansion of credits, with a view to the stimulation of enterprise. What is wanted is to check the further fall of prices, possibly also to raise somewhat a price level which has fallen considerably below normal. In the course of the past twenty years I have on several occasions expressly recommended such a temporary process of inflation. This was especially the case in the winter of 1931 to 1932, when an expansion of credits in conjunction with the organization of extensive public works seemed to be the only way of rapidly putting an end to the crisis. It may be useful to recall this now, as it explains why we cannot have recourse to a similar method in order to meet the difficulties of the day.

The present situation of the national economy is evidently altogether different. The level of prices has now undergone a sharp and very dangerous increase which has not so far been brought to a complete standstill. On the capital market there is a decided scarcity which is especially noticeable in the fact that, even with the ready co-operation of the banks, it is impossible to cover more than a fraction of the building trade's normal capital requirements and that the defence loan only to a rather limited extent is capable of attracting fresh savings. It is true that in the third quarter the money market has displayed a remarkable easiness. But this is due in a large measure to a reduction of stock, resulting from Sweden's isolation from foreign supplies, and thus reflects a corresponding reduction in the producers' and merchants' possession of real capital goods. Yet the trade continues in spite of all to keep balances with the banks in order to have funds available in case possibilities of increased activity in any direction should arise. The banks in their turn have placed considerable sums in treasury bills, which from their point of view represent a very liquid form of asset. From a national economic point of view these funds are however already spent by the State, which cannot repay treasury bills without issuing new ones or otherwise resorting to the capital market.

Presumably the apparent abundance of the money market will decrease as the subscriptions to the defence loan fall due for final payment and when increasing economic difficulties will force many depositors to withdraw funds from the banks. Thus, the present situation is doubtless characterized by a real scarcity of capital which must be taken into account when we proceed to consider ways and means to meet the difficulties with which we are confronted.

At present the principal aims of Swedish monetary policy should be to prevent an extension of the supply of means of payment, to check the price advance, and, perhaps, gradually to bring down the price level into somewhat closer conformity with the pre-war level. In such circumstances there is no sense in increasing the supply of capital by an inflation of bank credits. The actual shortage of capital should not be disguised by such methods.

What we should do is, by dint of rationalization and additional work, by the smooth shifting of labour from one branch to another, by the adjustment of wage rates to the market situation, and by a rational readjustment of consumption, to enhance the efficiency of industry and commerce, thus providing ways and means for covering inevitable expenditure and especially for facilitating the additional saving, which the State requires for national defence. For these purposes a very extensive adaptation of industry and commerce to the new economic situation will be required. This adaptation involves new enterprise and a willingness to take considerable risks in readjustments of production which may perhaps be merely temporary. In such circumstances the policy which would have been adopted in former days would have been to grant exemptions from taxation to newly started enterprises and to provide all possible facilities for the readjustment of production. In our times the tendency seems to be to proceed in exactly the opposite direction and to penalize new enterprise by an extensive confiscation of "excess profits". Nowadays every newly founded company must also reckon with an extremely hampering State regulation of the market. It is obviously impossible with such methods to attain the required rapid adjustment of industry and commerce to new conditions.

A thorough readjustment of our economic thought and action will evidently be necessary if Swedish industry and commerce, under the exceptional difficulties with which we are now faced, are to gain in strength and be enabled to effect the additional saving so urgently required in order to alleviate the oppressive shortage of capital.

THE BREEDING AND IMPROVEMENT OF FOREST TREES IN SWEDEN

BY NILS SYLVÉN, D. PH.

"The success already attained in the scientific breeding of agricultural plants should also encourage us to institute large-scale experiments for the *improvement of forest trees.*" This is a forecast made by Professor H. Nilsson-Ehle in the concluding paragraph of his article on "The breeding of agricultural plants in Sweden", in the issue of this quarterly for April 1930. Now — ten years after the publication of this statement — it can be noted with gratification that the scientific improvement of forest trees in Sweden can already look back on the efforts of four years.

On the 23rd January 1936 a meeting of interested persons was held, on the initiative of Baron Carl Bennet, at Vasatorp in Skåne. At this meeting the Society for Breeding Forest Trees was constituted. After preparations for two years this society entered into full operation in the spring of 1938. Thanks to a munificent donation, 400,550 kronor, from the Wallenberg Foundation intended to cover the Society's non-recurring expenditure, it was enabled to purchase an estate, particularly suitable as headquarters of the Society's operations, at Ekebo in the district of Svalöf. It comprised 22 hectares of ground suited for experimental cultivation. In the course of the summer and autumn of 1938 the main building on the estate was adapted so as to serve as premises for the institution; radiation greenhouses and a cryogen laboratory with a special greenhouse for experiments in freezing were erected; and hot-beds were laid out on an extensive scale.

The above-mentioned grant enabled the Society to procure first-class scientific equipment and to establich a reference library.

The grant also covered the expenses of an expedition to North America in the summer of 1938, led by Professor Göte Turesson, of Upsala University, for the collection of forest-tree specimens. As the result of this expedition the Society now processes a rich and valuable collection of North American forest-tree varieties suited for cultivation in Sweden.

At the beginning of 1939 all the new premises at Ekebo were available for use, so that the scientific work previously commenced could proceed according to programme. The continued maintenance of the Society's operations has moreover been greatly assisted by the support of large organizations representing forestry and the timber industries. An association named *Stödkommissionen för växtförädling av skogsträd* (The Association for the Support of Forest-Tree Breeding) has been formed with the object of securing the future activity of the Society: this association has now been joined by the Board of Crown Lands and Forests. The Society has moreover received special donations from Robertsfors Aktiebolag, Mo och Domsjö Aktiebolag, the Swedish Match Company, the South of Sweden Timber Association, Höganäs—Billesholms Aktiebolag, Kopparfors Aktiebolag, and other companies. In addition, a number of companies and private persons are permanent members of the Society.

Like the Seed Experiment Society of Sweden (see the article referred to in the first paragraph), and indeed in a still greater degree, the Society have found it necessary to concentrate the local breeding work at branch stations in different parts of the country. The first of these branch stations commenced operations in the summer of 1938, at Dalfors (in Dalecarlia), where a reconditioned manor had been placed at the disposal of the Society by Korsnäs Sågverks Aktiebolag. As from the year 1939 three additional branch stations have been brought into operation, namely one at Berga farm, near Linköping (in Östergötland), one at Brunsberg (in Värmland) and the third at Backe (in Ångermanland): premises and experimental plots for these three branch stations have been supplied to the Society by Major Eskil Ridderstad, of Linköping, Billeruds Aktiebolag and Kramfors Aktiebolag.

As from the year 1937 the results of the Society's operations have been brought to the notice of the public in a special column in "Svensk Papperstidning".

The primary aims of the breeding of forest trees are to improve the yield of the forests in quantity and, more especially, in quality. With a view to increase in quantity endeavours are made to produce trees with more rapid growth and thus with a shorter time of rotation. In order to attain the best possible quality, attempts must at the same time be made to modify the nature of the wood in accordance with the special properties desired by the leading Swedish industries and other buyers of timber. An important feature in this scientific work is the production of trees which shall show the greatest possible resistance to diseases and other deleterious influences which tend to lessen the output from the forests.

The improved harvest returns obtained by the breeding of agricultural plants had soon drawn attention to the possibility of similarly increasing the production and bettering the quality also of forest trees. The breeding of agricultural plants which has been systematically pursued in Sweden for more than fifty years may be regarded in some measure as a basis for the plant breeding now carried on with such success almost throughout the world. The scientific work in this field has indeed indicated methods for the improvement not only of agricultural plants but also of other kinds of plants.

The methods which appear to be best adapted for the improvement of forest trees are *direct selection* (supplemented by the judging of individual progeny), *crossing*, *transgression breeding* and *chromosome breeding*. All these methods have previously been scientifically tested in regard to agricultural plants.

The first-mentioned method, *direct selection*, is obviously the one which should be contemplated in the first place. It has in fact already been adopted in practical forestry, especially during the last twenty or thirty years. If the best trees in the forest stands are selected at an early date with a view to their being left at the time of the final cutting as mother-trees for the coming generation, a considerable advance will already have been made. The mother-trees thus left may undoubtedly be regarded as the chief carriers of valuable hereditary properties. A deeper knowledge of the transmissibility of valuable characters, by systematic studies of heredity, will, however, be indispensable if we are to perfect the direct selection which the final choice of stock-trees implies. A comparative appraisement of the progeny from various trees in the forest stands will thus be an important feature in the breeding programme. Fortunately, we still possess in our principal forest trees extensive natural stands displaying considerable variety. Wherever our forest trees during a succession of generations have been allowed to develop freely without disturbing interference on the part of man, a type of the species in question, adapted as far as possible to the environmental conditions, has been evolved by nature's stern selection. Thanks to this natural selection, we possess at present several different local varieties — comparable with the native varieties of agricultural plants — of pine and fir as well as of our hardwoods. The importance of this multiformity cannot be overrated where we are concerned with a further selection from the Swedish forest trees for breeding purposes. What has already been created by natural selection must be systematically furthered by breeding.

A primary condition for successful plant breeding is a thorough knowledge of the variation in type of the plants to be bred. Hence the first item on the programme of the Society for the Breeding of Forest Trees is a careful inventory of the forests with respect to variation among the commercially valuable trees. A preparatory survey in the autumn of 1936 of the variations in pines and firs in particular indicated that such an inventory would yield valuable material for selection. That this was actually the case was clearly shown by a thorough inventory of the Swedish aspens which was made in 1937 and 1938 with the aid of a grant from the Swedish Match Company. In the autumn of 1939, with a view to the continuation and extension of these surveys, the Society addressed itself in a public appeal to all the forest-owners in Sweden. This appeal contained a request for information regarding stands or individual trees of good type or of a type deviating in some respect in a may desirable for breeding purposes.

It had been ascertained that the narrow-crowned and slender-branched types of pine are considerably more valuable for forestry than the wide-crowned and thick-branched. In a survey of pines made by the Society (in cooperation with the Central Council of the Forest Commission Board) in five forestry districts in the summer of 1939, special attention was accordingly given to the occurrence of the narrow-crowned pine. For the collection of cones several stands of narrow-crowned pines and a large number of individual mother-pines of the best narrow-crowned type were selected. There is good reason to expect that the appraisement of the progeny of these pines will yield valuable results for continued pine breeding.

Of the types commonly occurring in our fir stands, the so-called "comb firs" *(kamgran)*, which are distinguished by their perpendicularly pendulous small branches, have been found to be the most rapid growers and those least damaged by rot. In the survey of firs now proceeding forest stands in which "comb fir" types abundantly occur have accordingly received special attention. Moreover, the chemical analyses which have been started on a large scale with a view to determining the yield of cellulose in firs of different branching type have already given indications in favour of the comb firs.

In view of the desirability of verifying the previously noted connection between the type of branching and the valuable properties of the fir as timber, a thorough investigation into this matter was started in the autumn of 1939 in several plantations of firs in the south of Sweden. For the purpose of this investigation fifty- to seventy-year stands of good type with the richest possible occurrence of comb firs were selected. Seeing that the trees examined within the research area were in each specific case of the same age and had originally been planted on the same plots, the figures obtained for height and diameter must be regarded as fairly conclusive in estimating the growth of firs of different branching type. The percentage of comb firs varied in the different stands from 64.8 to 19.4 per cent. It is particularly noteworthy that the percentage of comb firs was found to be considerably higher in the older stands which had been several times thinned. The more slowly-growing trees had in fact been largely removed in the thinnings. This in itself is cleary indicative of the more powerful growth of the comb firs. In the stand which was richest in comb firs, and which had been most radically cut down — a very select stand at Wrams-Gunnarstorp in Skåne — the comb firs showed a medium diameter of 9.4 cm and a medium height of 26.6 metres, whereas the remaining firs of different type were found to have a medium diameter of only 23.9 cm (5.5 cm lower than for the comb firs) and a medium height of merely 23.5 metres (3.1 metres lower than the comb firs). As only the noblest firs of the non-comb type had apparently been left in the final stand, it seems evident that the non-comb firs in regard to growth are still more inferior to the comb firs than is indicated by the medium figures. In other words, the higher figures obtained at Wrams-Gunnarstorp for the comb firs are by no means maximum values for the superiority of the comb firs to firs of another type. In three of the twelve other closely examined stands the comb firs were found to be still more superior in regard to diameter of trunk, and in five of the stands in regard to height. The maximum superiority of the comb firs was recorded as 8.67 cm in medium diameter and 6.09 metres in medium height.

The above figures, in conjunction with the other good characters of the comb firs clearly designate firs of that type as particularly valuable for breeding purposes. The mere knowledge of these facts should be of considerable practical importance in forestry.

As for the Swedish hardwoods, the birch in recent years has been coming more and more into prominence. Joineries and makers of veneer and skis annually consume far greater amounts of wood than our birch stands can at present supply. Birchwood of superior quality, especially that of the curled or veined type, now commands prices previously undreamt-of. The plant-breeder will find here wide scope for enterprise. Successful attempts to propagate the birch by vegetative processes as well as large-scale experiments in the grafting of birches have indicated new, relatively rapid methods of breeding. It is now apparently possible by means of "slips", as well as by the grafting of twigs from trees with curled or veined wood, to propagate these valuable types of birch on a large scale. The breeder need merely search for existing trees with the best curled or veined wood and take them as a basis for propagation. Any information regarding finds of such valuable trees is therefore very welcome. As birchwood of superior curled type will fetch a price of 10 kronor per cubic foot or more, and as the breeder can propagate this type comparatively rapidly by utilizing the shoots from the stump of the cut tree, the commercial prospects of such breeding are favourable indeed.

Hardiness is a character to which special attention must be devoted in the breeding of forest trees. The trees which have been principally subjected to hardiness tests in Sweden are fir, oak, beech and ash.

As regards firs, it has been found that the central European or "German" pine, on cultivation in southern and central Sweden, is by far more productive than the native Swedish fir; its lack of hardiness has, however, hitherto prevented it from being cultivated further north. In seedings in Swedish nurseries the "German" pine has been found to be extremely variable in regard to resistance to autumn frosts. The Society for Breeding Forest Trees have collected a considerable number of the plants of this tree which had been found to be insusceptible to the early and remarkably severe autumn frosts of the last few years. These plants are to serve as a basis for a series of hardiness tests, from which, when supplemented by freezing tests in the cryogen laboratory, the Society expect to obtain valuable results for practical forestry.

In regard to hardwoods, such as the oak, the beech and the ash, freezing test have shown that those trees which shed their leaves earliest in the autumn are much hardier than those which retain their greenery longest. This observation will evidently be of practical value in regard to the cultivation of hardwoods in localities exposed to frosts and in northerly latitudes.

In connection with scientific breeding it has been ascertained that Sweden possesses two distinct types of aspen, namely a northerly species, adapted for long hours of daylight, and a southerly variety, suited for shorter daylight hours. Aspens of the first-mentioned type are markedly stunted in growth where the hours of daylight during the period of vegetation are short: this aspen is therefore scarcely suited for cultivation in the south of Sweden. Aspens of the second-mentioned type, despite their increase in height as the north is approached, in view of their lack of hardiness, are as a rule unsuitable for cultivation in the north of Sweden. It seems, however, that by the selection of specimens of the best northern aspen which are more or less neutral in regard to hours of daylight and of more hardy specimens of the noblest type of southern asp, it should be possible in course of time to produce a type of asp suited for different parts of the country.

Almost all the agricultural plants subjected to breeding have shown very remarkable variation in regard to resistance to plant diseases. In all the closely examined species of such plants specimens displaying widely differing pictures of disease — ranging from total absence of symptoms of disease to more or less complete destruction — have been found side by side in the original populations. In the majority of cases this divergence could not be accounted for except by assuming the occurrence of hereditary types showing different resistance to disease. In a number of cases the actual existence of such types has in fact been established by special experiments.

The observations made in the breeding of agricultural plants are undoubtedly applicable also to the breeding of forest trees. The nearest correspondence to the cross-fertilizing forest trees will be found in cross-fertilizing grasses and other herbage plants. An example in point is the Mercury red clover produced at Svalöf, a new variety of clover highly resistant to the most baneful enemies of the plant, namely the clover eel and clover rot. The procedure for the production of this varity of clover, which is practically immune to the said diseases, was simply a direct selection of healthy plants from a population of Swedish red clover composed of specimens with varying power of resistance to parasitic attacks. There should be no difficulty whatever in applying this simple procedure in endeavours to produce varieties of forest trees as resistant as possible to the attacks of parasites.

A close analysis of a stand of forest trees shows us the picture of a population in which specimens varying in different respects are miscellaneously intermingled. Particularly in regard to the attacks of disease a striking diversity within the stand can easily be established. It often happens, for example, that individual firs in a stand showing the greatest possible uniformity in regard to origin and exposure are found to be entirely free from rot, whereas the other specimens have been more or less severely attacked by that devastating disease. It should therefore be possible, by retaining as mother-trees only the rot-free firs in a stand severely attacked by rot — perhaps the most insidious enemy of the fir — to obtain fir seed from a stock resistant to rot. This is a possibility, apparently realizable in practice, which affords prospects of great commercial importance.

The above considerations induced the Society for Breeding Forest Trees to include in their programme of work for the very first year preparations with a view to breeding types of firs resistant to rot. As a first step in this scheme experiments are being made in the Society's nurseries at Ekebo, Källstorp and Wrams-Gunnarstorp, in Skåne, with plants reared from the seed of rot-free firs growing in a stand severely attacked by rot. An abundant material in the form of two-year-old plants is now available. With these plants infection tests are to be arranged with a view to ascertaining any existing variation in the progeny with respect to susceptibility to the attacks of rot. New occurrences of rot-free firs in a stand otherwise more or less ruined by rot were discovered in the summers of 1938 and 1939, and preparations have been made for using them as seed-trees. The larger the number of finds of such rot-free firs, the greater the prospects of success in the breeding.

A particularly striking example of varying resistance to the attacks of fungi is afforded by the birch. This tree is almost annually attacked by a parasite fungus named "birch rust". In certain years birches infested with this fungus prematurely shed their leaves, and, as its early attacks have destroyed the leaf tissues, the tree is considerably stunted in growth both during the year of attack and in the following year. But even in the case of a regular epidemic of birch rust, it will be found on a close examination of a stand of birches, however severely attacked, that individual birches retain their green leaves, being almost or entirely free from rust.

The above may be illustrated by the results of the examination on the 14th September 1938 of a research area within a stand of birches attacked by rust at Bosundet in the Tåsjö district, in the province of Ångermanland. Fifty birches were thus examined and the degree of attack was designated by figures ranging from 1 to 5. Out of this number two were found to be entirely free from rust, four showed merely traces of the disease (degree of attack 1—), sixteen were slightly attacked (degree 1), fourteen were somewhat more severely affected (degree 2), four were moderately affected (degree 3), five were severely attacked (degree 4), and finally five were found to be completely destroyed by rust (degree 5). No other explanation could be given of the varying intensity in the attacks of the fungus than different susceptibility, due to hereditary disposition, in the uniformly exposed birches of the stand.

That the progeny of different mother-birches display strikingly varying susceptibility to the attacks of rust has likewise been clearly shown by experiments made this year at Ekebo. If in a stand of birches attacked by rust all the more severely affected trees are removed and propagation by seed is left to the mother-trees most slightly affected by, or entirely free from, rust, the type of the progeny should certainly show a tendency towards greater resistance to rust. By the systematic selection of entirely rust-free plants among young birches otherwise severely attacked by rust, it should now be possible to obtain a stock of birches completely immune to rust.

It should be evident from the above that direct selection is a method which is likely to lead to successful results in the breeding of forest trees. It may, however, also be useful to have recourse to *crossing*. This is borne out by the observations already made in foreign countries in this field. A suggestive example is that on the crossing of a good stock of European larch with the Japanese larch it has been found possible to secure the desired combination of the perfect stem of the European larch with the remarkable resistance of the Japanese larch to the canker which ravages the tree.

Valuable crossings of certain Swedish forest trees might also be effected. It may assumed from the outset that such possibilities exist in regard to the pine, the fir, the birch and the oak, seeing that specimens of different type or species are not unfrequently found side by side in our cultivated plantations as well as in native stands. The probability that, on the collection of seed from different mother-trees, we shall, to a certain extent, come across seed from crossings may be postulated at once. We may expect to find valuable combinations of the noble north-Swedish pine with the more rapidly-growing type of southern origin, of the "German" fir with the native variety, as well as of our different species of birch and oak. The experiments in the crossing of aspens which the Society for the Breeding of Forest Trees have conducted on a large scale in radiation green-houses clearly show that also artificial crossings can be carried out with success. In the course of the past winter very promising experiments on the crossing of birches have been made on dwarf trees reared in pots in accordance with a new method of grafting. And the crossing of different varieties of curled birch may perhaps enable us to start a mass production of controlled birch seed of the true curled type.

Transgression breeding is another kind of crossing; here, however, the object in view is not to combine different characters, but to enhance the degree of the same character. That valuable results can be attained by this method in the breeding of forest trees is indubitable. This is clearly indicated by the considerable increase in growth obtained in the first generation after crossing different species and varieties. There is good reason to presume that the offspring of the first generation after crossing a "German" and Swedish fir will show a more rapid growth than the progeny derived from purely "German" or purely Swedish seed. Preparatory experiments with a view to ascertaining whether this is actually the case were started in the spring of 1937. Moreover, special cultures for the purpose of obtaining controlled crossing seed of this kind have been planned. Seed plants from selected "German" and Swedish mother firs respectively, will be planted in alternate rows in comparatively large plots. Steps will afterwards be taken to bring these plants to early blooming by strangulation, similarly as in the case of fruit trees. When blooming has been produced by strangulation — preparatory tests hav yielded good results — all the specimens of the one type in the joint culture are emasculated and the pollination of the intact female flowers is left entirely to the other type. The emasculated firs of type 1 will then yield only crossing seed of the desired type, whilst the nonemasculated individuals of type 2 will give only seed produced within the type. The cross progeny and the selfed offspring are then examined in comparative tests, in order to ascertain the differences between them in regard to growth. If, in arranging such cultures, crossing seed of an approved character, producing progeny with a more rapid growth, were available in sufficient amount, much would already have been gained.

The finds in recent years of triploid giant aspens with a productivity considerably greater than that of the common diploid aspen indicate that also *chromosome breeding* might lead to successful results in the improvement of forest trees. In crossing tests with giant aspens and ordinary aspens conducted in the spring of 1937 in a radiation green-house at Svalöf, Professor Nilsson-Ehle in fact succeeded in producing an aspen with still higher chromosome number and more quick-growing than the triplod aspen with its 57 chromosomes, namely a tetraploid aspen with no less than 76, that is nineteen additional, chromosomes.

After the discovery in the autumn of 1937 of a female giant aspen, the Society for Breeding Forest Trees experimented also with the crossing of giant aspens of different sex. These and other extensive crossing tests with aspens of different type have yielded a number of additional 76-chromosome aspen plants of apparently the same high value as the tetraploid aspen first found.

Another method for the artificial production of forest trees high chromosome numbers has been tried with success, and is to be tested on a still larger scale, namely the colchicine method. At the end of 1937 two American investigators published some sensational results which they had attained in treating germinating seeds and growing points of shoots with solutions of colchicine. This is a very poisonous alkaloid belonging to the same group of vegetable poisons as nicotine and morphine, and occurs in the beautiful, crocus-like lily named *Colchicum autumnale*, the meadow saffron. By this treatment with colchicine the American scientists had succeeded in doubling the number of chromosomes in various plants. Similar results have been attained also in Sweden, in the breeding of forest trees. In the course of the last few years, the aspen, the birch, the oak, the pine and the fir have been subjected to colchicine treatment. Positive results, which will apparently be of commercial value, have already been attained in this way, particularly in regard to the aspen and the birch.

In the breeding of plants with such a lengthy time of rotation as forest trees, relatively long time must obviously elapse before definitive results can be shown. The prevalent view regarding the breeding of forest trees is that the time required is very long indeed. It should, however, be clear from the above account that the breeding of forest trees is by no means a desperately long undertaking, and that in this field too there are short cuts. In the improvement of forest trees, as in the breeding of plants, the breeder will be much aided by the use of artificial lighting in radiation green-houses and of artificial freezing in refrigerators. Thanks to new methods of vegetative propagation, the prospects for the successful improvement of trees, especially birch and aspen, are far better than was formerly supposed. With the aid of strangulation and modern methods of grafting new possibilities have been opened up for successful crossing within a relatively short space of time. The discovery of the colchicine method should render it possible to attain surprisingly rapid results also in the breeding of forest trees.

It will always be found, however, that the circumstances most favourable to the breeder are the splendid variety in forest trees — the sine qua non for successful breeding —, and their perennial seed-production, which facilitates repeated comparisons between the progeny.

Finally, it should again be emphasized that all the Swedish forest trees — to a still greater extent than agricultural plants — show different local varieties, formed by nature's long, stern selection and adapted, as far as possible, to environmental conditions.

CALCULATION OF THE YIELD ON LONG-TERM INVESTMENTS

BY EINAR HUSS, D. PH.

A rather animated discussion has been taking place this year, especially in German financial journals[1], regarding the bases for the calculation of the yield on long-term loans. As on previous occasions, the controversy has been confined, in the main, to certain simple fundamental concepts, the various arguments pro and con have been repeated, and when the discussion has petered out, both parties, as so often before, seem to consider their positions unshaken, and both claim the victory.

When such a divergence of opinion on elementary matters is encountered among those who represent expert knowledge of the subject, it is evident that great confusion must prevail among the general public in regard to these fundamental concepts of "financial mathematics". This confusion of ideas not only entails errors of judgment, but is also being used in defence of dilettantish and indubitably misleading methods of calculation.

It should be noted that there are two different groups of experts on questions relating to the profitability of investments, namely the mathematicians, on the one hand, and the financiers, on the other. The treatment of these problems requires merely a simple application of the rules of compound interest, and the fundamental concepts involved are so obvious to the mathematician that a discussion on the subject seems to him meaningless. Nor do the complications of the problems of profitability which occur in practice afford much interest from a theoretical point of view. It is significant that many mathematical studies of the yield on bond loans relate to types of loans of so simple a nature that they are practically non-existent on the market.

The financier, for his part, is likewise fully aware that the rules for the calculation of yield are extremely simple, though personally he may not have found time to brush up his school studies on the subject. Moreover, he possesses a practical knowledge of the market which often enables him almost intuitively to value a loan simply by comparison with similar loans. Hence, from the financier's point of view, computations of profitability formerly used, as a rule, to serve the purpose of determining the yield on representative loans in various branches of the market, on loans of a more unusual type, and obviously also on planned new issues.

Consequently both the mathematicians and the financiers, at any rate in former times, have given the investing public inadequate guidance in regard to the problems of profitability. The field has, in a large measure, been left open for improvised calculations of yield, laborious or roughly approximate, no fixed practice having been established in regard to the bases of computation. That the public discussion of these matters has often been so barren of results appears to be due to the failure to form a well-considered view as to what the term yield implies or should imply.

The term yield.

What the investor evidently requires to know is firstly how much interest he will get on his money, and secondly the exact duration of the investment. These desiderata are easily satisfied in the case of a claim carrying no interest, seeing that the principal in its entirety will then be tied up for a given period and no interest is due in the meantime. As a rule, however, notably in the case of bond loans, the matter is complicated by the fact that the income from the loan is distributed over several dates of payment: the interest is paid half-yearly or annually, sometimes quarterly, whilst the capital payments may be distributed over a sequence of years. The difficulty involved in the fact that the payments of principal and interest are distributed over a number of dates cannot be overcome by objective methods of calculation. The classical procedure for computing the yield on such loans must therefore be based on some assumption involved in that procedure, the implication of which should be made clear.

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[1] "Bank-Archiv" Nos. 1 and 4, 1940; "Die Bank" Nos. 5, 9 and 17, 1940.

This may be done by taking a simply concrete case as an example. Suppose we are to calculate the yield on a bond with a face value of 100 kronor, repayable in twenty years, and running at 4 per cent. annual interest. The bond-holder would thus receive 4 kronor at the end of each of the twenty years, and in addition 100 kronor at the end of the twentieth year. Assuming that the bond has been bought at a price of kr. 93: 50, the yield would be estimated according to the classical method (calculation of compound interest) at 4.5 per cent. It will then be found that, if the payments falling due, namely 4 kronor in annual interest and 100 kronor after twenty years, are deposited with a bank at 4.5 % interest, the holding at the end of the twentieth year will amount to the same sum, circa kr. 225: 50, as that to which kr. 93: 50 would accumulate at 4.5 % compound interest in the course of twenty years.

The above example, which indicates how the mathematical formulae employed in the computation work out in this concrete case, thus implies *that at an interest rate of 4.5 % per annum* the holding of the said bond is equivalent to a holding of kr. 93: 50 plus 4.5 % interest thereon during the life of the bond. It should be observed, however, that the calculation is valid only under the assumption that the interest received by the bond-holder can *be reinvested at 4.5 % interest till the expiration of the life of the bond,* or under some other assumption replacing that mentioned above.

A close analysis of such implications would take us into much deeper waters than might be inferred from the ordinary discussions on the subject of yield on capital. These discussions are in fact based on the acceptance of the classical method of calculation and thus also of such inadvertencies as it may involve. Such an analysis would, however, if applied to the foregoing example, give the following result.

1. If we maintain the assumption that the interest paid (4 kr. a year), is to be reinvested at 4.5 % till the expiration of the life of the loan, the investor might object that it would be more prudent to reckon with a lower rate of interest for these supposed reinvestments. Such calculations can, of course, be made, but they involve the introduction of one or more arbitrary factors, which may vary from one investor to another and from period to period. Objectively speaking, it is preferable that the interest should be supposed to be reinvested at the stated market rate.

2. If the above assumption is not maintained, it may be stated instead that the figure for the yield merely indicates the level, or serves as a gauge, of the yield, and that, in judging the duration of the investment, the investor must go by the loan contract for the bond in question. This point of view seems to be the usual one, and may be supported by a more thoroughly elaborated theory.

The foregoing refers only to yield expressed in percentage *per annum.* The yield, however, may quite as well be expressed in percentage per half-year, per quarter, per month, and so on. Obviously, these various methods for indicating the amount of the yield are equally employable, seeing that they merely serve as a gauge of the magnitude of the yield. The various gauges for the yield are, of course, interconnected. Supposing that the yield is 4.5 per cent. per half-year, the principal 1 will accumulate in the course of six months to 1.045 and in twelve months to $1.045 \times 1.045 = 1.092\,025$. An interest rate of 4.5 per cent. per half-year thus corresponds to 9.2025 per cent. per annum.

These observations will be rendered more tangible if, in the above example regarding the yield on a bond, "year" is exchanged for "half-year". The result will be that if we acquire for kr. 93: 50 a bond with a face value of 100 kronor, with a life of ten years, and carrying 8 % interest, payable half-yearly at 4 %, the yield will be 4.5 % per half-year, or 9.2025 per annum.

The above indicates that in computing the profitability it may be convenient to adopt sometimes one sometimes another gauge for indicating the amount of the yield. That these various gauges have not afterwards been reduced to a uniform basis is one of the causes of the confusion which prevails in the market figures for the yield on long-term investments.

The two usages for indicating the amount of the yield.

Generally speaking, only two different gauges are adopted in calculating the yield on bonds, namely percentage per annum and percentage per half-year. The discussion which crops up from time to time as to which of these methods is the "correct" one is, of course, futile, just as it is meaningless to contend that the metre is a more "correct" measure than the ell. Practical considerations may, however, argue for the selection of one or other of these gauges.

On the Continent and in northern Europe it has long been the practice to reckon the yield in percentage *per annum*. It may be pleaded in favour of the retention of this practice that it can be directly linked up with the rules adopted in drawing up the accounts of companies (per calendar year) as well as with the practice of insurance institutions and with taxation regulations etc. This method of calculation is termed below "usage I".

In the Anglo-Saxon countries bond loans are as a rule of such a type that the yield can best be calculated on the basis of the percentage per half-year. This method of calculation has thus become predominant. It should be noted, however, that in these countries the yield is not given, as calculated, in percentage per half-year: instead of this, the estimated percentage is simply doubled and given as the percentage *per annum*. Thus, if the yield is 4.5 % per half-year, it is stated to be 9 % *per annum*, instead of 9.2025 %, as shown above. Attention has been drawn also in Anglo-Saxon literature[1] to the drawbacks ensuing from this misleading usage. In practice, however, we must reckon with the occurrence of this inexact "usage II", according to which the interest per year is given as double the interest per half-year.

For conversion from usage I to usage II the following table[1] can be employed. The percentage according to usage I will be obtained if the "additional term" shown in the table is added to the percentage according to usage II.

Figure according to usage II in percentage	Additional term
1.42—2.44	0.01
2.45—3.16	0.02
3.17—3.74	0.03
3.75—4.24	0.04
4.25—4.69	0.05
4.70—5.09	0.06
5.10—5.47	0.07
5.48—5.83	0.08
5.84—6.16	0.09

Example: If the figure according to usage II is 6 % (thus more exactly 3 % per half-year), the figure according to usage I will be 6.09 (exact). Again, 5 % according to usage II corresponds to 5.06 (exactly 5.0625) according to usage I. The error arising from the rounding-off of the figures may amount, after the addition, to nearly one unit in the second decimal.

In most European countries the financial institutions have now adopted the classical method of calculation according to "usage I". I have had special reasons for taking an interest in this matter. Some ten years ago, in collaboration with my friend Dr K.-G. Hagström, I published tables showing the yield according to usage I of all the classes of loans commonly occurring on the market.[2] Other works based on the same method of calculation have subsequently appeared. These works seem to have contributed in some measure to the improvement in methods of calculation which has been effected in recent years, as is borne out by the correspondence on the subject which Dr Hagström and I have had the pleasure of receiving.

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[1] See, for example, Herbert G. Smith: "Some principles of interest". Bankers Magazine (Cambridge, Mass.), October 1938.

[1] For the benefit of those interested it may be pointed out that the table can be compiled with the aid of an ordinary table of square roots. If p_n is the upper limit of the interval of interest according to usage II which corresponds to the additional term $\frac{n}{100}$, p_n is obtained by cancelling the third and succeding decimals in the $\sqrt{4n+2}$, Tables with three or more decimals for the interest rates can of course, be compiled in a similar way.

[2] Huss-Hagström: Bond Values. Obligationskurser. Stockholm 1929.

Irrational methods of calculation.

It should be noted, however, that inexact methods of computation, the continuance of which can be explained only by the force of habit, are still being employed.

It is, for example, the practice that the yield on a 4.5 per cent. bond bought at par shall invariably be given as 4.5 per cent. This is, of course, incorrect, seeing that such a bond has a different value according as the interest is paid annually or half-yearly. In the former case the yield according to usage I is 4.5 %, according to usage II approximately 4.45 %. In the latter case, which represents the usual practise on the market, the yield according to usage I is 4.55 % (more exactly 4.550625 %), according to usage II 4.5 %.

An author[1] has recently expressed the view that the banks would find it difficult to convince their customers that a 4.5 per cent. bond acquired at par brings in an interest not of 4.5 per cent., but of 4.550625 per cent. Nevertheless, in the case of a bond the interest on which is paid not at the rate of 4.5 per cent. per annum, but at 2.25 per cent. per half-year, the annual yield is that last stated. It may be pointed out to the said German author that the large German bank Reichs-Kredit-Gesellschaft, known for its excellent information service, in its bond circular of April 1940 makes the following statement:

> "In conformity with the practice of financial institutions, the yield in these lists has been calculated under the assumption that it is capitalized once a year. As regards loans which are repaid at par and the nominal interest on which is paid half-yearly, the yield, even at a purchase price of 100 per cent., is accordingly somewhat above the nominal rate of interest. This method of calculation facilitates comparison of the rates of yield in our lists not only with one another, but also with all other kinds of capital investments."

Tables of annuity loans in respect of which the sinking fund and nominal interest are payable once a year have long been employed in Germany and other countries (Schinkenberger, Spitzer-Foerster). Seeing that the interest on such loans is now almost always paid half-yearly, such tables are misleading. Their use has been defended by arguing that the interest paid cannot be reinvested more than once a year. As pointed out above, however, it is not necessary to base the term "yield" on the assumption that the nominal interest paid is to be reinvested. But even if that were the case, it is certainly irrational then to exclude only one half-a-year's interest on every second payment of nominal interest.

If "year" is exchanged for "half-year", the above-mentioned German tables might be used for annuity loans in respect of which the sinking-fund and nominal interest is paid half-yearly. Seeing that the rates of interest at present range between 4 and 5 % per annum, or more correctly 2—$2^1/_2$ % per half-year, such computations, therefore, require tables showing the last-mentioned rates. Unfortunately, however, these works do not contain such tables.

It may further be pointed out that the adoption of the above-mentioned Anglo-Saxon usage II has sometimes been recommended with reference to the many excellent tables which have been compiled in America and elsewhere in accordance with that usage. It seems to have been forgotten, however, that these tables do not relate to sinking-fund loans, and that the investors would thus be left without any guidance in regard to the types of loans most common in central and northern Europe.

In addition, various roughly approximate methods, without any substantial theoretical basis, have previously been adopted. Fortunately, however, it appears that they are being rapidly discarded.

A survey of the methods employed for the calculation of the yield on long loans shows that the adoption of the inexact methods is being abandoned. This is doubtless chiefly due to the organizations which the large banks and other financial institutions have set up for their own use and for the service of their customers in this regard. In this service no abatement can be made in the demand for rapidity and exactitude of calculation. Only mathematically unimpeachable methods of calculation will pass muster, and according as such methods gain ground on the various capital markets, the inexact calculations are doomed to be superseded.

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[1] Kurt Oehme, Bank Archiv No. 4, 1940.

THE ECONOMIC SITUATION DURING THE THIRD QUARTER OF 1940

The General Situation. During the third quarter the volume of business in Sweden has shown further shrinkage. In the export industries curtailments of output have occurred on a still wider scale, whilst those home market industries which import their raw materials have encountered increasing difficulties in keeping up their production. Though the blockade has stimulated the domestic production of substitutes for various imported goods, this has by no means made up for what has been lost elsewhere in regard to the employment of capital and labour.

As regards the money market, the blockade of foreign trade, the gradual consumption of stocks of goods and the stagnation in building have reduced the requirement of industrial credits, and released capital tied up in stocks and trade credits. The increasing easiness of the money market during the past quarter must therefore be attributed to shrinkage in business. It is very significant that the business activity index of the Skandinaviska Banken, which shows the value of the clearing of commercial paper, has fallen from the record level of 143 at the beginning of this year to 117.9 for the past quarter, being the same low level which marked the decline of business during the third quarter of 1938.

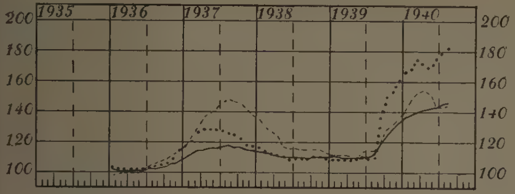
On the labour market the detrimental effects of the trade blockade had till quite recently been counterbalanced by the intensification in April of measures of national defence. Conscripts were then called up on a very large scale, and a considerable number of builder's workers, who had been severely hit by unemployment, found occupation during the spring and summer in the building of air raid shelters and the construction of military works. At this time rearmament in Sweden reached its culmination, and, according to a semi-official estimate, at least 100,000 persons employed in industry — being about one-fifth of the total number of industrial employees — took part in the early summer in production for military purposes.

During the summer the situation on the labour market, in different branches, was marked here by a shortage, there by a surplus, of man power. The difficulties experienced by the farmers in procuring sufficient labour were, broadly speaking, overcome, notably by the temporary grant of home leave to farmers and agricultural labourers called up for military service. Similarly in forestry, where large numbers of workers were required in order to carry out the Government scheme for the cutting of firewood on an extensive scale. In mining, the metal industry and the engineering workshops employment has on the whole been satisfactory. There has actually been a marked shortage of skilled tool and machine workers.

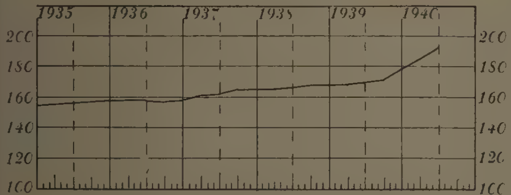
Reductions of output in consequence of the blockade have been particularly marked in the pulp and paper mills, the production index for which fell from 115 in March down to 47 in July. It should be mentioned in this connection that the wartime boards have recently drawn up a plan for placing orders with the sulphite mills for 50,000 tons of cellulose as fodder and 6 million litres of spirit, corresponding to about a month's output if operations proceed on the same scale as latterly.

In the late summer there was a slowing-down in the calling-up of conscripts for military service, and there were indications that the State orders for armaments had in some respects reached their culmination. This change in the situation was felt by the iron works, which during the second quarter had devoted at least one-third of their maximum capacity to Government orders. The works producing high-grade iron for export were most severely hit. But even the works producing

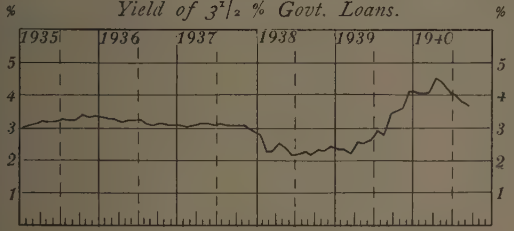
Board of Trade Price Index.
(1935 = 100).
. . . . Import Goods
- - - - - - - - - Export Goods
——————— All Goods



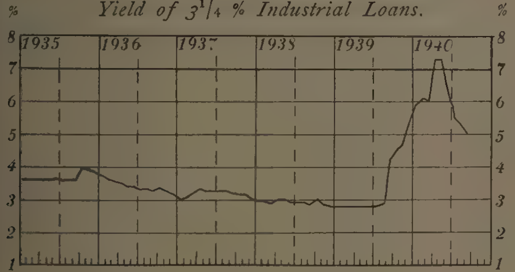
Cost of Living Index.
(1914 = 100)



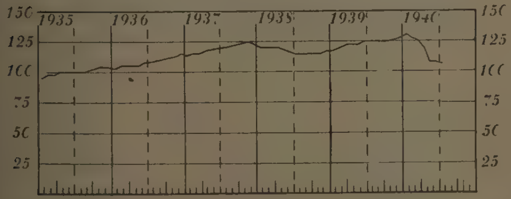
Yield of 3½ % Govt. Loans.



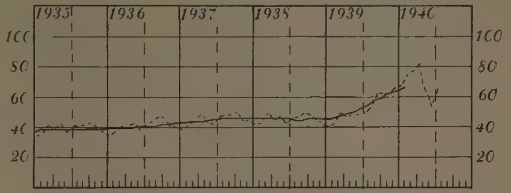
Yield of 3¼ % Industrial Loans.



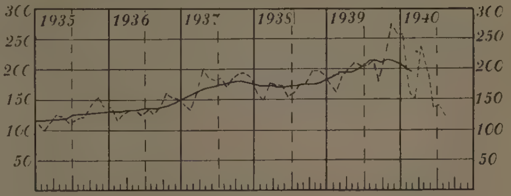
Federation of Industries Production Index.
(1935 = 100)



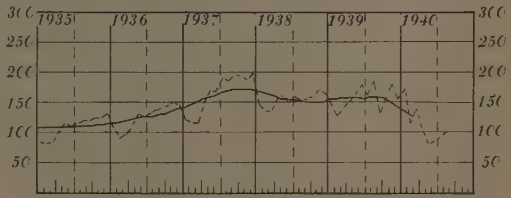
Millions of Axle-Kilometers travelled by Loaded Goods Trucks on the State Railways.



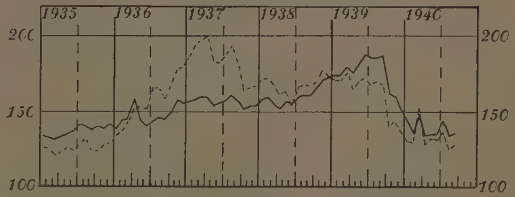
Imports of Sweden in Million Kr.



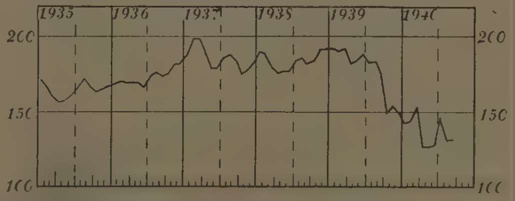
Exports of Sweden in Million Kr.



Share Index.
——————— Home Industries
- - - - - - - - - Other Industries



Share Index.
Banks



In the three diagrams in the upper right hand column the dotted line denotes original figures and the whole line current 12-month averages.

ordinary commercial iron, which, unlike those first-mentioned, had in some measure actually been favoured by the blockade, and which since the outbreak of war had had little to worry about except as regards their supplies of fuel, scrap and pig iron, found it difficult in the late summer to obtain a market for their products. This was chiefly due to the standstill in building, which is normally responsible for one-third to two-fifths of the total consumption of finished iron and steel in Sweden, and to the falling-off of Government orders for armaments, as well as to keener competition from certain producers of high-grade iron, who, owing to the blockade, had engaged in the manufacture of commercial iron.

Production in certain branches of industry has been affected not only by the relative saturation of the demand for armaments, but also by a shortage of raw materials, despite the accumulation, in many cases, of very considerable reserve stocks. The plans for the economizing with raw materials which had been drawn up by the wartime administration were brought into the foreground by the critical situation in Norway, but could not be put in hand till some time afterwards. These plans apparently aim at a drastic reduction in the consumption of certain imported goods, principally metals. As a step in this control textile raw materials were placed under embargo as from the 11th August 1940.

The supply of fuel during the coming winter is considered to be well provided for by the agreement with Germany for deliveries of coal and coke as well as by the very extensive cutting of firewood which has been carried on in Sweden since the outbreak of the war. If nothing unforeseen happens, industrial activity will not be checked by a shortage of fuel during the next coming year. A stricter economy of fuel than usual will, however, be called for. The Fuel Commission have recently drawn up a rationing plan which is of interest as indicating how the prospects of different industries in the proximate future are viewed by that authority. Certain quotas fixed in this plan for the consumption during the period 1st July 1940 to 30th June 1941, in percentage of the 1939 consumption, are reproduced in the subjoined table. It should be noted that a certain portion of the authorized consumption may take the form of firewood.

	Coal	Coke
Iron ore mines	100	95
Iron works	95	120
Iron and steel manufactures	85	85
Engineering workshops	95	80
Shipyards	90	90
Electric industries	100	100
Cement works	35	40
Brickyards and tileries	30	20
Glass industry	60	40
Furniture makers	40	40
Pulp mills	47	—
Paper mills	47	25
Flour mills	90	85
Bakeries	100	85
Sugar industry	98	90
Chocolate works	65	80
Breweries	85	75
Tobacco factories	90	90
Margarine and lard factories	50	50
Textile and clothing industries	80—85	80
Tanneries	95	50
Boot and shoe factories	100	80
Rubber industry	80	80
Colour and detergent industries	80	80
Fertilizer industry	85	80
Match factories	80	—
Manufactories of explosives	140	140

The strikingly low figures for the allotment of fuel to cement works, brickyards and tileries reflect the decline in building. The number of "hearths" (room or kitchen) completed in towns with a population of over 30,000 during the first quarter of 1940 was 82 per cent. of the number for the same quarter a year previously, and had fallen during the second quarter to 59 per cent. The building for civil purposes which was proceeding at the end of the first six months of this year is estimated in the aggregate at merely about one-third of the building activity a year before. The building of air raid shelters may be regarded as practically terminated, and the construction of military works is likewise of a transitory character. Moreover, the production of dwelling-houses will in all probability be further reduced in the sequel: during the first six months of this year the building permits granted in towns with a population of over 30,000 was merely 11 per cent., reckoned by hearths, of the corresponding figure in 1939.

The difficulties of the Swedish export industries have been somewhat alleviated by the commercial and clearing agreements concluded in the course of the last few months with Germany, Russia and Finland as well as some other countries. The agreement made with Germany at the end of June 1940 regarding pulp and paper provided for Swedish deliveries to that country of about 170,000 tons of chemical pulp, 15,000 tons of mechanical pulp and 63,000 tons of paper. These quantities, however, are quite small in proportion to Sweden's total exports. The agreement concluded with Russia at the beginning of September provides facilities for the importation into Sweden of various goods, being chiefly oil products, cereals, cattle cake and manganese, up to a value of 75 million kronor during the first year of the agreement. In return, Swedish iron goods and workshop products are, in the first place, to be supplied to Russia, partly on credit. The grant of a Swedish five years' credit of 100 million kronor to facilitate Russian purchases in Sweden of rolling stock, tool machines, high-grade steel, ball bearings and other goods should considerably improve the situation of the Swedish producers of high-grade iron and of the engineering workshops. The agreement with Finland provides for Swedish deliveries of goods, being chiefly iron manufactures and workshop products, up to a value of 50 million kronor during the half-year period from the 1st September 1940 to the 1st March 1941.

Sweden's trade with other foreign countries is expected to be on a comparativey small scale in the immediate future. Swedish wood goods and Swedish iron are being used in the restoration of Norway. Also Holland, Belgium and France are now greatly in need of wood goods. Hitherto, however, no large business has been done with those countries, owing to difficulties in arranging for payments. On the other hand, the transport of wood goods to Holland and Belgium should not meet with insuperable difficulties, now that the Dutch port of Delfzil has been opened.

The blockade westwards is still complete, save for the route via Petsamo, which, however, admits of transport facilities only on a very limited scale. A road for automobile traffic between Petsamo and Rovaniemi is in course of construction, and the conveyance of goods between Haparanda and Petsamo is being effected, for Swedish account, by the recently formed State company named Transitotrafik. By the end of August from 200 to 225 tons of goods were being daily conveyed in either direction by this route.

This means of transport, however, can scarcely assume much importance for the supply of Sweden with oil, nor is it probable that sufficient amounts of Russian mineral oil will be imported in the near future. After the 5th October the allocation of petrol and "light bentyl" (motor spirit) cannot be reckoned with even for extremely urgent requirements. Producer-gas motors are, however, now being made on a considerable scale, and it may be expected that a rather large proportion of the total number of motor lorries and busses in Sweden will shortly have been adapted for driving by producer-gas. The number of registered producer-gas vehicles in Sweden amounted on the 1st September to 5,650, including 3,990 motor lorries and 570 busses, corresponding to about 6 and 11 per cent., respectively, of the total number. These figures, however, are rising rapidly from day to day. Moreover, a plan has been drawn up by the Traffic Commission for the more effective utilization of the most economic motor lorries — in the first place, of course, those provided with producer-gas motors —, by the establishment of local centres for the reception and distribution of orders, the reduction of no-load drives, etc.

Steps have also been taken to enable agricultural tractors, which number about 18,000, to be kept going to the greatest possible extent during the short season of the year in which they can be used. The Swedish Producer-Gas Company has, for example, been commissioned to make arrangements for the manufacture and sale to the farmers of up to 5,000 producer-gas motors. The production is to be concentrated on motors which can be used alternatively for tractors and motor lorries.

The harvest this year has been bad, and trade in cereals and products thereof has been placed under State control. According to the latest official estimates, the crop of bread cereals (wheat and rye) amounts only to 700,000 tons, as compared with an average of 1,200,000 tons for the last three years, the annual consumption, inclusive of seed-corn, is roughly one million tons, and there are reserve stocks of approximately 350,000 tons. Nor is the quality of this year's cereal harvest as high as normally. The hay crop is estimated at 61 per cent. of the average for the last three years: the quality of the hay, unlike that of the cereals, is, however, considered to be high. The financial difficulties of the farmers owing to the bad harvest have been aggravated by the increasing shortage of imported albuminous cattle food.

Since April wholesale prices have been rising at a somewhat slower pace than earlier in the year. The wholesale price index of the Swedish Board of Trade for August was 146, as compared with 141 in April 1940 and 111 in August 1939 (1935 = 100). The note circulation, after the marked increase when Norway was drawn into the war, has again been reduced and has been approaching the level at the end of 1939.

The money market during the past quarter was distinguished by an increasing easiness. In the commercial banks the excess of advances over deposits, relatively to the domestic general public, was reduced during the period from the 31st May to the 31st August from 791 to 358 million kronor. During the same period rediscounts dwindled from 295 to 25 million kronor, whilst liquid funds and bond holdings showed an increase of 107 and 69 million kronor, respectively. The bonds thus acquired by the commercial banks appear to have been mainly treasury bills, considerable amounts of which had been bought by them also in September. As above indicated, the more abundant supply of of money must be regarded mainly as a reflection of diminished business activity. Some tightening of the money market may be expected in view of the payments of taxes and subscriptions to the defence loan. An intensification of production with readjustments entailed by the situation, or, failing this, the consumption of savings which will result from a marked increase in unemployment, would doubtless similarly affect the money market.

Sweden's exclusion from big foreign markets entailed in August a shrinkage of her foreign trade, as compared with the same time last year, of over 45 per cent., reckoned by value, and thus still more marked in regard to quantum. The surplus of imports for the first eight months amounted to 525 milion kronor, as against 306 million kronor for the same period in 1939. Comparative figures are shown below.

	Imports	Exports	Surplus of imports
	Million kronor		
Jan.—Aug. 1935	910	801	109
» » 1936	1,014	925	89
» » 1937	1,355	1,215	140
» » 1938	1,302	1,185	117
» » 1939	1,559	1,253	306
» » 1940	1,409	884	525

Although the balance of trade, despite the obstacles in the way of importation, have latterly shown a surplus of imports, Sweden's position in regard to foreign exchange has decidedly improved. During the period from the 30th April to the 31st August the market value of the Riksbank's gold stock and the book value of its net holdings of foreign exchange increased in the aggregate from 1,206 to 1,329 million kronor, whereas the net holdings of foreign exchange in the commercial banks were reduced during that period by 31 million kronor. This appears to be mainly due to the fact that payments for exports and the interest on foreign claims had come in, whilst imports had to a considerable extent been financed by advance payments.

The Stock and Bond Markets. The situation of the stock market during the past quarter has been still marked by a low level of prices and limited transactions in shares. The average value per day of the shares which had changed hands on the Stock Exchange was for the last three months 0.15 million kronor, as compared with 0.70 and 0.95 million kronor for the same period in 1939 and 1938, respectively. Generally speaking, the level of share prices has risen but slightly above the bottom level in April. Moreover, owing to the blockade and the consequent reductions in output, the shares of exporting companies, especially in the wood goods and pulp line, have fallen still lower. It should further

Share Index.	1936	1937	1938	1939					1940									
	Jan.	Jan.	Jan.	Jan.	April	July	Oct.[1]	Dec.[1]	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	27th Sep.
Home industries	138	157	158	175	177	187	161	154	145	136	149	134	134	135	144	134	136	136
Other industries	134	186	172	171	165	169	140	137	130	130	153	128	132	131	137	125	128	129
Of which																		
Grängesberg Company	78	177	219	191	169	178	145	145	131	128	167	110	122	131	134	125	128	132
Exporting engineering industries	167	223	196	195	188	188	149	146	133	131	162	133	150	140	147	136	141	141
Other, including iron and steel ind.	148	196	173	181	174	182	153	149	138	134	161	130	130	132	138	124	128	128
Wood-goods and pulp-ind.	108	146	131	124	119	127	107	104	104	106	116	104	100	102	110	99	100	100
Combined wood and iron ind.	143	186	176	200	208	209	181	177	184	192	208	196	191	187	195	176	176	180
Banks	168	189	191	192	181	183	149	149	143	144	153	127	127	128	147	132	132	137

Note. Where not otherwise stated, the figures are for the middle of the month. [1] For October 1939 the figures refer in part to *minimum prices*, and for December mainly so. From January 2nd 1940 the minimum prices are no longer in force.

be noted that the reduced profits which many companies must reckon with this year will be further curtailed by increased taxation, based on the larger profits made last year. As will be seen from the appended table and diagrams, which show the average share prices in percentage of par, there was some recovery in September, when there was also an increase in transactions in shares. This, however, is a usual occurrence in the autumn.

Nor has any noteworthy increase in business been apparent on the bond market. On the other hand, the level of bond prices has shown a steady improvement. In the subjoined table approximate figures are given for the effective interest (in percentage) corresponding to the market prices during the last few months. According to these figures, the prices for Government and mortgage bank loans at the end of September corresponded to a yield of about $3^{2}/_{3}$ per cent., as against $4^{1}/_{2}$ per cent. or more in April. A number of low per cent. municipal loans now yield an effective interest of about 4 %, as compared with about 5 % in April; and for first-rate low per cent. industrial loans the present prices may be said to correspond to a yield of $4^{1}/_{2}$ to 5 per cent., whereas the figures for yield had previously risen to 7 per cent. and above it; which, however, is due to the fact that during the then standstill in business purely nominal prices were quoted.

	Number of loans	1940 15/3	10/4	14/5	14/6	16/7	16/8	13/9	27/9
Swedish Government.									
3 % 1934–. Conv. 1944	1	4.10	4.53	4.41	4.12	3.99	3.81	3.69	3.69
3 % 1937–97. Conv. 1947	1	4.19	4.59	4.45	4.70	4.00	3.79	3.67	3.82
Mortgage Banks.									
3 % Conv. 1944—47 . . Repayment 1999–2009, at latest.	4	4.15	4.52	4.47	4.23	3.96	3.77	3.66	3.65
Municipalities.									
3, $3^{1}/_{4}$ and 4 % Conv. 1943—46 . . . . . . Repayment 1956–1966, at latest.	3	4.59	4.99	4.89	4.58	4.29	4.19	4.00	4.02
Industrial Companies.									
$3^{1}/_{4}$ 1937–57. Conv. 1947	3	5.98	7.27	7.27	6.33	5.53	5.31	5.00	4.85
$3^{1}/_{2}$ % 1937–62. » 1947	1	5.41	6.27	6.27	5.97	5.28	5.15	4.65	4.65
4 % 1935–55. » 1945	1	5.44	6.49	6.68	6.49	5.61	4.79	4.48	4.64

The issues of large bond loans during the third quarter are shown below:

Issued by	Rate of interest	Nom. amount in kronor	Issue price in %
City of Gothenburg	$4^{1}/_{2}$	3,400,000	99
City of Helsingborg	$4^{1}/_{2}$	1,805,000	98

As for the defence loan, the amount immediately required, namely 500 million kronor, had been fully subscribed by the 1st of August, or after the lapse of about half the time allowed for subscription. The subscription is still proceeding.

Some Statistical Data Concerning

Currency Reserve, Stock of Gold, Note Circulation.

	Net Claims of Banks on Foreign Countries million kronor (End of month)									The Riksbank's								
	Riksbank			Commercial banks			Total			Stock of Gold[1] (million kr.)			Stock of Gold and Net Claims on Foreign Countries[1] (million kr.)			Note Circulation (million kr.)		
	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940
Jan.	972	695	406	− 55	−15	+ 72	917	680	478	948	1363	1084	1920	2058	1490	880	953	1330
Feb.	921	675	485	− 38	−19	+ 80	883	656	565	981	1364	916	1902	2039	1401	870	943	1298
March	866	660	505	− 19	−21	+ 87	847	639	592	1013	1367	727	1879	2027	1232	898	973	1303
I (Average)	**920**	**677**	**465**	**− 37**	**−18**	**+ 80**	**882**	**658**	**545**	**981**	**1365**	**909**	**1901**	**2041**	**1374**	**883**	**956**	**1310**
April	851	618	454	− 24	−39	+102	827	579	556	1011	1397	752	1862	2015	1206	908	994	1427
May	827	593	433	− 29	−50	+ 99	799	543	532	1060	1419	793	1887	2012	1225	883	965	1433
June	814	583	437	− 39	−21	+ 94	775	562	531	1088	1425	834	1902	2008	1271	922	997	1431
II (Average)	**831**	**598**	**441**	**− 31**	**−37**	**+ 98**	**800**	**561**	**539**	**1053**	**1414**	**793**	**1884**	**2012**	**1234**	**904**	**985**	**1430**
July	803	563	578	− 22	−17	+ 86	781	546	664	1096	1434	725	1899	1997	1304	907	987	1394
Aug.	797	549	685	− 28	−12	+ 71	769	537	756	1112	1488	644	1909	2037	1329	919	1017	1399
Sept.	923	476	753	−201	−42		721	434		1240	1499	638	2163	1974	1391	976	1189	1411
III (Average)	**841**	**529**	**672**	**− 84**	**−24**		**757**	**506**		**1149**	**1474**	**669**	**1990**	**2003**	**1341**	**934**	**1064**	**1401**
Oct.	819	421		−130	− 3		689	418		1299	1396		2118	1817		991	1192	
Nov.	784	386		− 89	+11		695	397		1327	1398		2111	1784		953	1190	
Dec.	751	301		− 40	+47		711	348		1332	1293		2083	1594		1008	1356	
IV (Average)	**785**	**369**		**− 87**	**+18**		**698**	**387**		**1319**	**1362**		**2104**	**1712**		**984**	**1246**	
Notes	The figures comprise balances with foreign customers and holdings of foreign bills and foreign bonds less amounts due to foreign customers.									At end of month.						Monthly averages		

[1] The Riksbank holding of gold is given at its market value, other items at their book values.

Rates of Exchange.

	Nominal Quotations of the Commercial Banks (Monthly Averages)											
	London Kr. for £ 1			**New York** Kr. for $ 1			**Paris** Kr. for 100 francs			**Berlin** Kr. for 100 Rmk		
	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940
Jan.	19.405	19.427	16.950	3.885	4.166	4.200	13.085	11.056	9.604	156.948	167.530	169.000
Feb.	19.411	19.422	16.950	3.872	4.149	4.200	12.810	11.050	9.608	157.008	167.010	169.000
March	19.420	19.421	16.950	3.900	4.149	4.200	12.315	11.050	9.134	157.294	166.846	169.000
I (Average)	**19.412**	**19.423**	**16.950**	**3.886**	**4.155**	**4.200**	**12.737**	**11.052**	**9.449**	**157.083**	**167.129**	**169.000**
April	19.410	19.414	16.950	3.903	4.152	4.200	12.200	11.050	8.550	157.261	166.898	169 000
May	19.403	19.420	16.950	3.909	4.151	4.200	[1]11.034	11.050	7.910	157.432	167.156	168.625
June	19.400	19.428	16.950	3.917	4.153	4.200	11.000	11.050	8.915	158.114	167.000	168.010
II (Average)	**19.404**	**19.421**	**16.950**	**3.910**	**4.152**	**4.200**	**11.411**	**11.050**	**8.458**	**157.602**	**167.018**	**168.545**
July	19.403	19.417	16.950	3.939	4.151	4.200	10.987	11.050	9.589	158.683	167.000	168.500
Aug.	19.401	19.241	16.950	3.978	4.157	4.200	10.980	10.970	9.756	159.861	167.111	168.500
Sept.	19.401	16.985	16.950	4.047	4.200	4.200	11.000	9.744	9.800	161.990	168.500	168.500
III (Average)	**19.402**	**18.548**	**16.950**	**3.988**	**4.169**	**4.200**	**10.989**	**10.588**	**9.715**	**160.178**	**167.537**	**168.500**
Oct.	19.419	16.950		4.079	4.200		10.962	9.738		163.750	168.692	
Nov.	19.418	16.610		4.128	4.200		10.950	9.519		165.769	169.000	
Dec.	19.425	16.688		4.163	4.200		11.036	9.517		167.450	169.000	
IV (Average)	**19.421**	**16.749**		**4.123**	**4.200**		**10.983**	**9.591**		**165.656**	**168.897**	

[1] From May 5th, inclusive.

Sweden's Economic Position.

Commercial Banks, Stock Exchange.

	Commercial banks									Share Index						Shares sold on the Stockholm Stock Exchange (1000 kr.)		
	Deposits (million kr.)			Advances incl. bills rediscounted (million kr.)			Surplus of Advances (million kr.)			Home Industries			Other Industries					
	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940
Jan.	3823	4145	4334	3974	4223	4831	151	78	497	158	175	145	172	171	130	1357	1034	257
Feb.	3822	4169	4231	4012	4265	4897	190	96	666	160	175	136	172	170	130	926	873	213
March	3868	4260	4245	4058	4327	4884	190	67	639	155	180	149	167	176	153	1063	997	684
I (Average)	**3838**	**4191**	**4270**	**4015**	**4272**	**4871**	**177**	**81**	**601**	**158**	**177**	**143**	**170**	**172**	**138**	**1115**	**968**	**385**
April	3844	4217	4120	4095	4375	4865	251	158	744	152	177	134	161	165	128	950	814	370
May	3832	4190	4007	4133	4414	4798	301	224	791	157	182	134	164	170	132	559	782	255
June	3832	4242	3999	4140	4450	4702	308	208	703	155	188	135	153	174	131	768	1509	220
II (Average)	**3836**	**4216**	**4042**	**4123**	**4413**	**4788**	**287**	**197**	**746**	**155**	**182**	**134**	**159**	**170**	**130**	**759**	**1035**	**282**
July	3938	4367	4132	4135	4437	4612	197	70	480	160	187	144	166	169	137	869	376	157
Aug.	4009	4447	4190	4172	4535	4548	163	88	358	161	186	134	168	170	125	585	732	111
Sept.	4059	4488		4237	4742		178	254		161	187	136	168	167	128	1405	994	166
III (Average)	**4002**	**4434**		**4181**	**4571**		**179**	**137**		**161**	**187**	**138**	**167**	**169**	**130**	**953**	**701**	**145**
Oct.	4094	4444		4217	4791		123	347		166	160		171	140		1138	581	
Nov.	4008	4296		4261	4850		253	554		171	160		177	143		822	286	
Dec.	4041	4232		4254	4873		213	641		173	154		174	137		650	76	
IV (Average)	**4048**	**4324**		**4244**	**4838**		**196**	**514**		**170**	**158**		**174**	**140**		**870**	**314**	
Notes	Deposits from and loans to the public within the country (at the end of the respective month)									The figures denote mid-monthly average prices.						Averages per Stock Exchange business day		

Rates of Interest and Price Level.

	Yield of Bonds (%)						Wholesale Price Index (Board of Trade) (1935 = 100)									Cost of Living Index (July 1914 = 100)		
	Govt. Loans			Industrial Loans			Import Goods			Export Goods			All Goods					
	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940
Jan.	2.75	2.39	4.07	2.97	2.79	5.92	116	108	166	135	111	140	114	110	136	165	167	178
Feb.	2.25	2.34	4.04	2.97	2.78	6.04	114	108	168	130	111	147	113	109	138	·	·	·
March	2.27	2.22	4.10	2.91	2.78	5.98	112	108	174	127	112	152	112	109	140	·	·	·
I (Average)	**2.42**	**2.32**	**4.07**	**2.95**	**2.78**	**5.98**	**114**	**108**	**169**	**131**	**111**	**146**	**113**	**109**	**138**			
April	2.49	2.55	4.53	3.00	2.77	7.27	111	108	172	124	111	154	111	109	141	165	168	186
May	2.33	2.53	4.41	2.98	2.77	7.27	110	109	170	117	110	153	110	109	142	·	·	·
June	2.18	2.57	4.12	2.89	2.77	6.33	108	110	175	116	113	144	110	109	143	·	·	·
II (Average)	**2.33**	**2.55**	**4.35**	**2.96**	**2.77**	**6.96**	**110**	**109**	**172**	**119**	**111**	**150**	**110**	**109**	**142**			
July	2.22	2.92	3.99	2.88	2.78	5.53	109	109	179	116	114	143	110	110	146	166	169	193
Aug.	2.25	2.76	3.81	2.88	2.93	5.31	109	110	182	115	114	144	110	111	146	·	·	·
Sept.	2.15	3.44	3.69	2.86	4.21	5.00	109	139		115	118		109	118		·	·	·
III (Average)	**2.21**	**3.04**	**3.83**	**2.87**	**3.31**	**5.28**	**109**	**119**		**115**	**115**		**110**	**113**				
Oct.	2.31	3.52		2.95	4.49		110	150		115	127		110	124		167	171	197
Nov.	2.25	3.69		2.83	4.72		110	153		115	130		110	128		·	·	
Dec.	2.43	4.10		2.82	5.31		109	161		113	135		110	132		·	·	
IV (Average)	**2.33**	**3.77**		**2.87**			**110**	**155**		**114**	**131**		**110**	**128**				
Notes	Calculated on market prices at middle of months															Refers to end of quarters		

Trade and Industry.

	Total Imports (million kr.)			Total Exports (million kr.)			Exports in million kr.											
							Animal and vegetable stuffs etc.			Minerals and metals and manufactures thereof			Chemicel products and drugs; paints and varnishes; soaps; fertilizers, etc.			Hides, skins, rubber, textiles, and manufactures thereof		
	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940
Jan.	159	174	258	145	149	169	16.6	11.5	9.0	43.9	39.2	39.9	3.3	4.3	6.8	6.4	7.6	4.7
Feb.	147	163	167	134	125	115	17.1	13.9	9.5	46.7	44.2	29.7	4.1	4.8	4.9	6.5	6.9	8.4
March	173	191	150	133	139	140	13.3	12.4	12.3	52.6	49.3	40.1	3.7	5.6	6.1	5.2	5.9	7.5
I (Average)	**160**	**176**	**192**	**137**	**138**	**141**	**15.7**	**12.6**	**10.3**	**47.7**	**44.2**	**36.6**	**3.7**	**4.9**	**5.9**	**6.0**	**6.8**	**6.9**
April	167	201	238	157	152	104	11.7	11.3	14.2	53.6	50.7	35.0	5.1	4.7	4.3	4.5	5.2	3.0
May	167	208	197	159	166	80	10.5	10.8	5.3	54.6	53.8	26.1	4.3	5.8	4.0	4.6	4.7	1.6
June	155	202	136	150	178	86	11.2	12.2	3.2	50.3	53.9	36.9	3.6	4.6	2.9	3.3	4.5	1.2
II (Average)	**163**	**204**	**190**	**155**	**165**	**90**	**11.1**	**11.4**	**7.6**	**52.8**	**52.8**	**32.7**	**4.3**	**5.0**	**3.7**	**4.1**	**4.8**	**1.9**
July	160	204	140	156	160	92	12.3	12.8	3.6	50.3	50.0	47.2	4.0	4.7	2.2	3.7	4.6	1.5
Aug.	173	217	123	150	185	97	12.0	13.4	4.1	48.9	55.6	47.4	4.2	4.6	2.3	4.4	5.2	1.1
Sept.	178	179		154	131		12.1	8.5		49.8	36.4		4.9	3.8		5.3	2.8	
III (Average)	**170**	**200**		**153**	**159**		**12.1**	**11.6**		**49.7**	**47.3**		**4.4**	**4.4**		**4.5**	**4.2**	
Oct.	199	219		161	160		11.8	4.5		48.2	47.0		5.3	4.3		5.7	2.5	
Nov.	198	274		172	180		10.8	12.9		50.1	54.3		4.4	5.3		5.4	5.3	
Dec.	190	258		167	155		11.1	9.0		44.7	42.3		4.1	5.6		5.6	5.0	
IV (Average)	**196**	**250**		**167**	**165**		**11.2**	**8.8**		**47.7**	**47.9**		**4.6**	**5.1**		**5.6**	**4.3**	
Notes																		

	Exports in million kr.						Index of Production according to Feder. of Swed. Industries (1935 = 100)			Supply of Industrial Work Index numbers			Waggon-axle Kilometres of loaded Trucks on State Railways			Unemployment in Trade Unions (%)		
	Wood gods, paper pulp, pasteboard and paper, and manufactures thereof			Machinery, means of transportation, instruments, etc.														
	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940	1938	1939	1940
Jan.	57.0	52.5	71.7	17.9	33.7	36.6	120	118	128	·	·	3.66	41.1	40.1	66.6	15.6	14.7	14.1
Feb.	33.9	29.5	36.5	25.8	25.3	25.9	120	120	127	·	·	3.67	42.5	42.1	74.7	14.5	13.0	14.5
March	32.6	30.6	49.0	26.0	34.7	25.1	119	122	126	·	·	3.60	47.9	48.9	76.9	12.9	11.6	15.8
I (Average)	**41.2**	**37.5**	**52.4**	**23.2**	**31.2**	**29.2**	**120**	**120**	**127**	**3.45**	**3.66**	**3.64**	**43.8**	**43.7**	**72.7**	**14.3**	**13.1**	**14.8**
April	52.7	48.0	28.6	29.3	31.9	19.3	119	123	118	·	·	3.53	43.7	46.1	82.2	10.7	9.0	11.1
May	58.3	62.1	27.7	26.3	29.4	15.7	118	123	107	·	·	3.44	45.2	47.8	63.0	8.4	6.3	9.5
June	60.0	72.5	29.2	21.7	30.3	12.8	116	125	107	·	·	3.42	41.1	48.5	53.6	8.5	5.6	8.7
II (Average)	**57.0**	**60.9**	**28.5**	**25.8**	**30.5**	**15.9**	**118**	**124**	**111**	**3.51**	**3.92**	**3.46**	**43.3**	**47.5**	**66.3**	**9.2**	**7.0**	**9.8**
July	57.2	65.2	25.3	28.6	22.8	12.3	115	125	106	·	·	3.40	44.8	49.1	65.8	7.2	4.8	8.9
Aug.	58.9	77.1	29.6	22.0	28.9	13.0	114	126	106	·	·	3.38	45.9	52.6		7.2	4.9	
Sept.	56.5	56.2		25.6	23.1		114	124		·	·		48.8	61.1		7.5	6.3	
III (Average)	**57.5**	**66.2**		**25.4**	**24.9**		**114**	**125**		**3.53**	**3.96**		**46.5**	**54.3**		**7.3**	**5.3**	
Oct.	63.1	75.6		26.5	25.8		115	126		·	3.78		47.2	62.4		9.0	8.0	
Nov.	68.1	79.7		33.3	23.0		116	127		·	3.78		44.9	61.4		11.2	10.4	
Dec.	73.9	68.6		27.8	24.5		116	128		·	3.77		41.9	66.3		17.8	15.2	
IV (Average)	**68.4**	**74.6**		**29.2**	**24.4**		**116**	**127**		**3.63**	**3.78**		**44.7**	**63.4**		**12.7**	**11.2**	
Notes							Seasonal change removed			The figure 3 denotes normal supply of work			Million kilom. per month			% of total members at end of month		

Stockholm 1940. Kungl. Boktr. P. A. Norstedt & Söner 402976

SKANDINAVISKA BANKEN

STOCKHOLM 16.

October 1940

Oktober 1940

TELEPHONE: STOCKHOLM 0101 FERNSPRECHER: STOCKHOLM 0101

TELEGRAPHIC ADDRESS: SKANDINAVBANK TELEGRAMMADRESSE: SKANDINAVBANK

Member of the Stockholm Stock Exchange

Mitglied der Stockholmer Effektenbörse

(Real Estate Holdings) free[5]	10	100	4	4.50	4.50	—	87	87	—	85	(*Grundstücksgesellschaft*) *freie*[5]
Finspongs Metallverks A.-B. (Metal Products)	7.68	80	4.80	4.80	4.80	81	79	80	81	83	Finspongs Metallverks A.-B. (*Metallwaren*)
› › › › ›, free[5]	1.92	80	4.80	4.80	4.80	81	80	80	81	85	› › › ›, freie[5]
Ford Motor Company A.-B[5]	5	100	12	12	10	85	92	[4] 100	90	93.50	Ford Motor Company A.-B.[5]
Holmens Bruks- & Fabriks A.-B. (Pulp, Paper, Woolen and Cotton Goods) Series A	21	100	6	6	6	75	80	70	76.50	—	Holmens Bruks- & Fabriks A.-B. (*Papier, Holzmasse, Woll- u. Baumwollwaren*) *Ser. A*
› B[5]	13.56	100	6	6	6	—	[4] 80	70	75	75	› *B*[5]
Höganäs-Billesholms A.-B. (Coal, Firebrick and Clay Goods)	30	100	7	7	7	128	135	130	128	131	Höganäs-Billesholms A.-B. (*Kohlen, Feuerfeste Steine und Tonwaren*)
Kopparfors A.-B. (Pulp and Timber)	20	100	6	5	5	80	75	77	74	75	Kopparfors A.-B. (*Holzmasse und Holz*)
Korsnäs' Sågverks A.-B. (Paper, Pulp and Timber)	21	100	8	7	7	[2] 150	[4] 155	137	135	140	Korsnäs' Sågverks A.-B. (*Papier, Holzmasse u. Holz*)
Linoleum A.-B. Forshaga (Linoleum)[5]	4	50	8.80	9.35	6.60	[2] —	—	—	65	65	Linoleum A.-B. Forshaga (*Linoleum*)[5]
Mexikanska Telefon A.-B. Ericsson (Telephone Service) Series A[5]	5.4	180	—	—	—	27	31	30	31	31	Mexikanska Telefon A.-B. Ericsson (*Fernsprecherdienst*) *Ser. A*[5]
› B[5]	16.2	180	—	—	—	24.50	28	26.50	28.50	29	› *B*[5]
Mo och Domsjö A.-B. (Pulp and Timber) Series A	32	100	15	8	8	130	120	115	122	122	Mo och Domsjö A.-B. (*Holzmasse und Holz*) *Ser. A*
› B[5]		100	15	8	8	130	120	115	122	122	› *B*[5]
Munksjö A.-B. (Paper, Pulp and Timber) Series A	10	100	3	—	4	52	50	46	50	50	Munksjö A.-B. (*Papier, Holzmasse und Holz*) *Ser. A*
› B	3.99	100	3	—	4	45	45.50	[4] 46	42	43.50	› *B*
› B, free[5]	1	100	3	—	4	45	45	42	42	43	› *B, freie*[5]
Oxelösunds Järnverks A.-B.	6.17	100	10	10	10	130	120	125	130	132	Oxelösunds Järnverks A.-B.
(Iron, Coke, Window-Glass etc.), free[5]		100	10	10	10	130	125	125	130	132	(*Eisen, Koks, Fensterglas usw.*), *freie*[5]
Sandvikens Jernverks A. B. (Iron)	20	100	[3] 3+5	[3] 3+5	[3] 3+5	150	[4] 150	141	148	152	Sandvikens Jernverks A.-B. (*Eisen*)
Skånska Cement A.-B. (Cement)	21	1 000	70	70	70	1200	[4] 1400	[4] 1300	[4] 1300	1200	Skånska Cement A.-B. (*Zement*)
Stockholms Superfosfat Fabriks A.-B. (Chemical Products)	12	150	12	12	12	200	195	190	200	201	Stockholms Superfosfats Fabriks A.-B. (*Chemische Erzeugnisse*)
Stora Kopparbergs Bergslags A.-B. (Paper, Pulp, Timber and Iron)	60	100	10	10	10	266	[4] 265	233	240	240	Stora Kopparbergs Bergslags A.-B (*Eisen, Papier, Holzmasse und Holz*)

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[1] Refer to dividends paid for the preceding financial year. — *Bezieht sich auf Dividenden, die für das vorgehende Geschäftsjahr bezahlt worden sind.* — [2] Ex dividend. — *Abzügl. Dividende.* — [3] Interim dividend paid in the preceding year. — *Im Vorjahr ausgeschüttete Vorschussdividende.* — [4] Selling price. — *Briefkurs.* — [5] Acquirable by aliens. — *Von Ausländern erwerblich.* — [6] Not acquirable by aliens. — *Nicht von Ausländern erwerblich.* — [7] Not quoted on the Stock Exchange. — *An der Börse nicht eingeführt.*

Quotations of Swedish Bonds (Contd.). — *Kursnotierungen für schwedische Obligationen (Fortsetzung).*

In percentage; ex interest. — *In %, exclusive Zinsen.*

Not quoted on the Stock Exchange.	Terms of Redemption *Tilgungsmodalitäten* D = Drawings *Auslosung* P = Purchase *Rückkauf* R = Perpetual Loan *Staatsrente*	Redeemable in Whole *Konvertibel*	Interest Dates *Zinstermine* *	Approximate Prices (bid) *Approx. Notierungen (Geld)* 1940					***An der Börse nicht eingeführt.***
				28/6	30/7	39/8	27/9	4/10	
A. B. BOFORS (War Material) 3¼ % 1937	1941—1957 D	15/5 1947	15/5—15/11	75	87	88	89	89	A. B. BOFORS (*Kriegsmaterial*) . . . . . . 3¼ % 1937
REDERI A.-B. SVENSKA LLOYD (Shipping) . . . 6½ % 1920 conv.	1928—1942 D		15/3—15/9	100	100	100	100	100	REDERI A.-B. SVENSKA LLOYD (*Reederei*) . . . 6½ % 1920 *konv.*
SVENSKA TÄNDSTICKS A.-B. (Matches) . . . . 5 % 1931	1936—1956 D	2/1 1941	2/1—1/7	87	92	90	91	91½	SVENSKA TÄNDSTICKS A.-B. (*Zündhölzer*) . . . . . 5 % 1931
TELEFON A.-B. L. M. ERICSSON (Telephones), Registered certificates . . . . . 5½ » 1931	1941—1951 D	1936[1]	15/6—15/12	80	88	86	86½	87¾	TELEFON A.-B. L. M. ERICSSON (*Fernsprecher*), *Schuldverschreibungen* . . . 5½ » 1931
INTERNATIONAL MATCH REALIZATION COMPANY, Voting Trust Certificates				$ 25	[2] $ 15	[3] $16½	$ 13	$ 13	INTERNATIONAL MATCH REALIZATION COMPANY, *Voting Trust Zertifikate* . . . .
A.-B. KREUGER & TOLL, Bearer Certificates of Deposit 5 » 1929				4¾	4¾	4¾	6	6	A.-B. KREUGER & TOLL, *Inhaber-zertifikate* . . . 5 » 1929

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[1] The company has the right to redeem the loan in 1939 at 102 %, in 1940 at 101 %, in 1941 and thereafter at 100 %. — *Die Gesellschaft ist berechtigt, die Anleihe im Jahre 1939 zu 102 %, 1940 zu 101 % und in folgenden Jahren zu 100 % einzulösen.* — [2] Ex dividend. — *Ex Dividende.* — [3] Asked. — *Brief.*

* **Amortization-dates underlined. — *Tilgungstermine unterstrichen.***

Quotations of Foreign Bonds. — *Kursnotierungen für ausländische Obligationen.*

In percentage; ex interest. — *In %, exclusive Zinsen.*

	Terms of Redemption *Tilgungsmodalitäten* Drawings	Redeemable	Interest	Prices (bid) *Notierungen (Geld)*	

Stockholm 1940. Kungl. Boktr. P. A. Norstedt & Söner 403095

SKANDINAVISKA BANKEN

AKTIEBOLAG

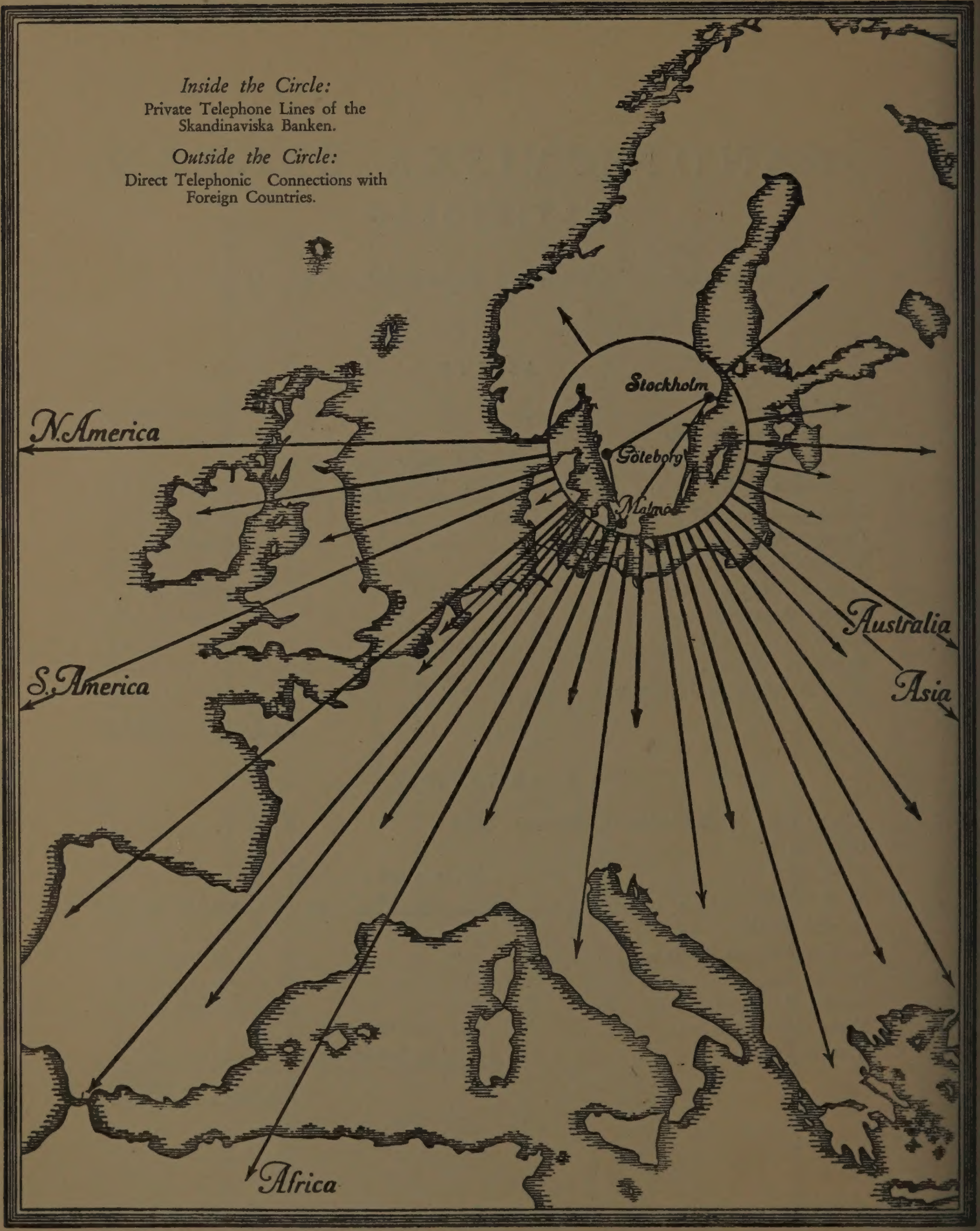
Statement of Condition September, 30th, 1940

ASSETS.

Cash in hand		Kr. 120.203.802: 45
Swedish Treasury Bills		» 82.000.000: —
Swedish Bills	Kr. 294.125.479: 57	
Foreign Bills	» 499.782: 32	» 294.625.261: 89
Loans (secured)		» 431.920.394: 95
Current Account (secured)		» 77.456.930: 33
Swedish Banks and Savings Banks		» 16.982.065: 99
Foreign Banks		» 28.923.051: 47
Sundry Accounts		» 24.996.913: 85
Bonds		» 59.818.724: 03
Shares		» 158.140.710: 18
Bank Buildings & Furniture		» 17.033.133: 80
		Kr. 1.312.100.988: 94

LIABILITIES.

Bills at sight in circulation (»postremiss» bills)		Kr. 20.074.816: 12
Deposits:		
at sight	Kr. 223.792.441: 21	
at notice	» 770.066.181: 92	» 993.858.623: 13
Swedish Banks		» 12.332.231: 80
Swedish Savings Banks		» 8.379.424: 78
Foreign Banks		» 19.117.790: 47
Sundry Accounts		» 96.338.102: 64
Share Capital	Kr. 87.188.000: —	
Reserve Funds	» 74.812.000: —	» 162.000.000: —
		Kr. 1.312.100.988: 94


Inside the Circle:
Private Telephone Lines of the Skandinaviska Banken.
Outside the Circle:
Direct Telephonic Connections with Foreign Countries.
Stockholm
Göteborg
Malmö
N.America
S.America
Australia
Asia
Africa